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RESPONSE  
EXPEDITED PROCEDURE  
GROUP 1754  
PATENT APPLICATION

AF/1754  
#21/VB  
9/16/3  
(NE)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q54488

Masahiro OHMORI, et al.

Appln. No.: 09/579,708

Group Art Unit: 1754

Confirmation No.: 7789

Examiner: Steven J. Bos

Filed: May 26, 2000

For: PEROVSKITE TITANIUM-TYPE COMPOSITE OXIDE PARTICLE AND PRODUCTION  
PROCESS THEREOF

**REQUEST FOR RECONSIDERATION**

**MAIL STOP AF**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

This Request for Reconsideration is submitted in response to the Office Action dated June 10, 2003, in which the Examiner set a three-month period for response.

Review and reconsideration on the merits in view of the following remarks is respectfully requested.

**REMARKS**

Claims 1-17 and 22-24 are all the claims pending in this application.

**I. Response to rejection of Claims 1, 6, 14, 17 and 22-24 under 35 U.S.C. §**

**103(a)**

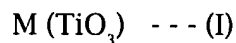
On page 2 of the Office Action, claims 1, 6, 14, 17, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menashi or Bruno.

Basically, the Examiner's position is substantially the same as that set forth in the previous Office Action.

In addition, at page 3 of the Office Action, the Examiner indicates that Applicants' arguments have been considered but are unpersuasive. The Examiner asserts that Bruno teaches a surface area of less than 50 m<sup>2</sup>/g in claim 1 and at col. 2, line 59. The Examiner also asserts that Menashi teaches a surface area of 83.7 m<sup>2</sup>/g in table IX.

Applicants respectfully respond as follows.

The present invention relates to a perovskite titanium-containing composite oxide particle having a composition represented by general formula (I), wherein the specific surface area is 28 to about 200 m<sup>2</sup>/g, the specific surface area diameter  $D_1$  of primary particles defined by formula (II) is about 10 to 50 nm, and a  $D_2/D_1$  ratio of the average particle size  $D_2$  of secondary particles to  $D_1$  is about 1 to about 10:



wherein M is at least one of Ca, Sr, Ba, Pb, or Mg,

$$D_1 = 6 / \rho S \text{ --- (II)}$$

$\rho$  is the density of the particles, and S is the specific surface area of the particles.

Bruno discloses a particle size of 0.2 to 1.0  $\mu$ m and a surface area of less than 50 m<sup>2</sup>/g. However, Bruno does not teach or suggest particle sizes of secondary particles. In addition, the primary particle size of the present invention is about 0.005 to 0.05  $\mu$ m (5 to 50 nm at page 11, lines 4-8 of the present specification), which is

smaller than the particle size of the particles of Bruno. Therefore, Bruno does not disclose the particles of the present invention, which have a ratio  $D_2/D_1$  that is 1 to 10.

Accordingly, Bruno does not teach or suggest the particles of the present invention.

In addition, Menashi relates to a process for producing barium titanate based powder products consisting of unaggregated, primary particles. See col. 6, lines 22-26. Therefore, Menashi does not disclose secondary particles, and actually teaches away from secondary particles. Accordingly, the particles of Menashi would not have a ratio of  $D_2/D_1$  within the claimed range of the present invention since secondary particles are not present.

Therefore, Menashi does not teach or suggest the particles of the present invention.

Further, the A/B mole ratio of the present invention is nearly equal to that of the synthesis materials. See Declaration under 37 C.F.R. § 1.132 submitted herewith showing the A/B mole ratio of the particles and of the starting materials (the executed version of the Declaration will be submitted promptly after it is received by the undersigned), and the unexpected superiority of the particles. Thus, the process used to obtain the particles of the present invention does not require a wash process, and as a result, defects are not present in the particles and the particles have very good electrical properties.

In contrast, the process used to obtain the particles of Bruno requires a washing step in order to eliminate excess barium hydroxide and to control the A/B mole ratio

within the desired range. *See* col. 5, line 55-60. The A/B mole ratio of the particles of Bruno is smaller than the A/B mole ratio of the synthesis materials. In addition, in general, a wash process generates a great amount of defects when barium compounds are eliminated from the surface of particles, and these defects damage the electrical property of the particles.

The process of Menashi also requires a wash step to eliminate excess barium hydroxide and to control the A/B mole ratio within the desired range. *See* col. 5, col. 7, lines 43-57 et seq. and claim 6. The A/B mole ratio of the particles of Menashi is smaller than the A/B mole ratio of the synthesis materials, and since a washing step is required, the particles have defects that damage the electrical property of the particles. In addition, although the particles of Menashi may have a surface area of  $83.7 \text{ m}^2/\text{g}$ , the A/B mole ratio is 0.578, which means that the particles can not be used as a dielectric composition.

Thus, the particles of the present invention are neither taught nor suggested by Bruno and Menashi, and further, the particles of the present invention provide unexpectedly superior results.

In view of the above, it is respectfully submitted that Bruno and Menashi do not render the present invention obvious, and withdrawal of the foregoing rejections is respectfully requested.

## II. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in

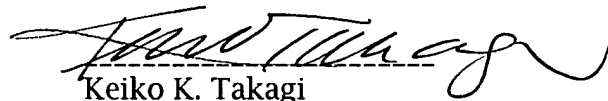
AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/579,708

Attorney Docket No.: Q54488

issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

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